APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,021	06/25/2004	Jixiong Dong	9896-023/NP	2768

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EXAMINER
CHRISS, ANDREW W

ART UNIT	PAPER NUMBER
2619	

MAIL DATE	DELIVERY MODE
07/08/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/500,021	DONG, JIXIONG
	Examiner	**Art Unit**	
	Andrew Chriss	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 May 2008</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-3 and 5-11</u> is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-3 and 5-11</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>17 October 2007</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All b)☐ Some * c)☐ None of:
   1.☐ Certified copies of the priority documents have been received.
   2.☐ Certified copies of the priority documents have been received in Application No. _____.
   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
      Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
      Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on May 9, 2008 has been entered.

Response to Amendment

2.   Applicant's amendment, filed May 9, 2008, has been entered and carefully considered.

Claim 4 is canceled, Claims 1 and 8 are currently amended, and Claims 1-3 and 5-11 are

currently pending.

3.   Objection to Claim 8 is withdrawn in light of Applicant's amendment.

4.   In light of Applicant's amendment to Claim 8, the previous rejection of said claim under

35 U.S.C. 112, second paragraph, is hereby withdrawn.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

6.   **Claims 1-3 and 5-11** rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. **Regarding independent Claims 1 and 8**, the claim language recites

"dividing an optical port" and "dividing the minimum protection units of more than one

protection channel in *each optical port...*" (emphasis added). The claim language "each"

inherently implies that there are two or more optical ports present. **Further regarding Claim 1**,

there is no antecedent basis for "each logic node." Therefore, the claim language is indefinite.

Claims 2, 3, and 5-7 depend on Claim 1, while Claims 9-11 depend on Claim 8, and fail to

resolve the deficiencies therein.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
sale in this country, more than one year prior to the date of application for patent in the United States.

7.   **Claims 1 and 5-7** rejected under 35 U.S.C. 102(b) as being anticipated by Chapman

(United States Patent 5,974,027).

        Regarding Claim 1, Chapman teaches a channel switching protection method for a

Synchronous Digital Hierarchy (SDH) fiber network. Chapman teaches a network of nodes

(Figure 1), wherein each node supports multiple working channels (column 1, line 64), thus

dividing the optical port into multiple minimum protection units. Chapman further teaches an

automatic protection switch/K3 byte (APS) which can represent multiple values and is used to

define a state of a channel (column 4, lines 1-2; column 5, lines 1-22), thus dividing the

minimum protection units of more than one protection channel in each optical port into different

logic-systems to form more than one logic-system. Further, the nodes disclosed in Chapman

utilize the aforementioned APS/K3 byte to perform protection switching, therefore acting as the

claimed logic nodes. Chapman also teaches modifying a K3 byte value to denote the equivalent

of Applicant's claimed working modes. Figure 1 shows a network in the absence of a fault

condition, indicated by an APS value "1111" (column 1, table 1), thus a normal working mode. Figure 2 shows a network in which a node is assigned an APS value equivalent to a switching working mode, since the working path input of Node 3 is patched to the protection ring output (Column 6, lines 1-10). Further, Figure 2 discloses the protection ring 7 connected to the working path 6 in node 3. Figure 3 shows a network in which a node is assigned an APS value equivalent to a bridging working mode, as the protection ring 7 input of Nodes 3 and 4 is connected to the working path 6 output (column 4, lines 11-20). Figure 7 shows a network operating in a mode equivalent to a passing working mode, as the protection ring input 7 of Node 3 is connected to the protection ring 7 output (column 6, lines 51-63). Lastly, Chapman teaches a quiescent (dormant) state in which the protection ring is neither generated nor terminated (column 5, lines 58-62) and the APS byte is set to "1111," as described above. In an example where a link is broken and protection is needed, the value of the APS byte is modified, as described with regards any of Figures 2, 3, or 5, thus switching normal working mode of each node to one of the other three working modes when protection is needed.

Regarding Claim 5, Chapman teaches the protection channels and working paths are of Virtual Container (VC) type, such as a VC3 (column 3, lines 23-25). Further, Chapman teaches assigning one of multiple available values of an APS/K3 byte to denote status of the working and protection paths, thus mapping one or more than one of multiple VC3s into different logic-systems to form more than one logic system.

Regarding Claim 6, Chapman teaches in Tables 1, 2, and 3 that the APS/K3 byte values, which implement protection switching trigger conditions, also denote the types of traffic that will

be let through while the protection condition is in place (e.g., "0010" denoting signal fail high priority traffic).

Regarding Claim 7, Chapman teaches prioritizing both high priority and low priority requests at a bridge controller within a switch from both a local and remote switch (multiple minimum protection units (column 5, lines 1-28), thereby adjusting and crossing services sent to a single minimum protection unit. As the request processing is based on time, this request is handled by the equivalent of a time-division cross-connect unit..

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

10.   **Claims 2-4** rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Applicant's admitted prior art.

Regarding Claim 2, Chapman teaches all of the limitations of Claim 1, as described above. However, Chapman does not teach switching being a multiplex section protection switching, a sub-network connection protection switching, or a channel protection switching. In the same field of endeavor, Applicant's admitted prior art cites an ITU-T proposal, where the "main protection methods of SDH fiber transmission network are channel protection, multiplex section protection, and sub-network connection protection." It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Applicant's admitted prior art with Chapman in order to compensate for line errors (e.g., loss of signal) by switching from a normal operating line to a protection line.

Regarding Claim 3, Chapman further teaches an APS/K3 byte which enables the creation of logic-systems for protection switching, further comprising a long path control bit and a switch architecture byte (Tables 1, 2, and 3), as described with regards to Claim 1 above. Chapman also teaches a channel/path trace in which the status/configuration of nodes in the network are gathered (column 2, lines 3-7). As described above with regards to Claim 1, these channel/path trace values can denote working modes, switching modes, bridging modes, and passing modes. Lastly, Chapman teaches that the path trace results are transmitted along with the value of the APS/K3 byte to the denoted node (column 6, lines 4-10).

Regarding Claim 4, Chapman further teaches that the nodes respond to the APS/K3 byte that is sent out over the working and protection channels, for the switching (column 6, lines 4-10), bridging (column 6, lines 18-20), and passing pages (column 6, line 28-32).

11.   **Claims 8-11** rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Mochizuki et al (United States Patent 6,122,249).

Regarding Claim 8, Chapman teaches a switch that divides a port into multiple minimum protection units and divides the minimum protection units of more than one protection channel into different logic-systems, as described with regards to Claim 1 above. However, Chapman may not teach the claimed paging analyzer, switching controller, or cross-connection panel. In the same field of endeavor, Mochizuki teaches an add-drop multiplexing apparatus for SONET and SDH fiber networks. Specifically, Mochizuki teaches a selector 16 that selects one of the low-order signals based on configuration data (format shown in Figure 6) provided by the path setters (column 7, lines 7-10), equivalent to the function performed by Applicant's claimed paging analyzer. Mochizuki also teaches a path controller 15, that writes path data onto holders 13 and 14 (column 7, lines 4-5), and on to a path setting unit 2e or 2w, which cross-connects lower-order signals (column 6, lines 32-34), thus performing functions equivalent to Applicant's claimed switching controller and cross-connection panel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the components taught in Mochizuki with the system taught in Chapman in order to provide an add-drop multiplexing functionality.

Regarding Claim 9, Chapman teaches the equivalents of normal working pages, passing pages, bridging pages, and switching pages as described with regards to Claim 1 above. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Chapman with Mochizuki in order to provide a structure in which a large proportion of the protection channel can be disconnected from the nodes being protected, and is thereby available for protecting other channels in the network.

Regarding Claim 10, the combination of Chapman and Mochizuki teaches all of the

limitations of Claim 8, as described above. Chapman further teaches various working modes of

the input-output connections, as shown in Figures 1, 2, 3, and 7 and described with regards to

Claim 1 above.

Regarding Claim 11, Chapman discloses the equivalent of the claimed bus

configurations, as described with regards to Claim 1 above.

Response to Arguments

12.   Applicant's arguments filed May 9, 2008 with regards to Claim 1 have been fully

considered but they are not persuasive. Applicant states that Chapman fails to disclose the

equivalent of the claimed passing, bridging, and switching working mode. However, Chapman

discloses the equivalent of the claimed working modes in Figures 2, 3, 7. Figure 2 shows a

network in which a node is assigned an APS value equivalent to a switching working mode,

since the working path input 6 of Node 3 is patched to the protection ring 7 output (Column 6,

lines 1-10). Figure 3 shows a network in which a node is assigned an APS value equivalent to a

bridging working mode, as the protection ring 7 input of Nodes 3 and 4 is connected to the

working path 6 output (column 4, lines 11-20). Figure 7 shows a network operating in a mode

equivalent to a passing working mode, as the protection ring input 7 of Node 3 is connected to

the protection ring 7 output (column 6, lines 51-63).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Chriss whose telephone number is (571)272-1774. The examiner can normally be reached on Monday - Friday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chi H Pham/
Supervisory Patent Examiner, Art Unit 2616
7/3/08

/A. C./
Examiner, Art Unit 2619